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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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B. Noel Kivlin
Meyertons, Hood, Kivlin, Kowart & Goetzel, P.C.
P.O. Box 398
Austin, TX 78767-0398

EXAMINER

FERRIS, DERRICK W

ART UNIT

PAPER NUMBER

2663

6

DATE MAILED: 04/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/640,602

Applicant(s)

OWEN ET AL.

Examiner

Derrick W. Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-16 and 18-32 is/are rejected.
- 7) ☒ Claim(s) 10 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3.4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1-6, 8, 11-16, 18, 19, 21-24, 27-30, and 31** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,055,618 A to *Thorson*.

As to **claim 1**, see figures 5 and 6 of *Thorson*. With respect to the limitation “receiving a first packet at a first node of the plurality of nodes, the first node comprising a plurality of packet buffers, wherein each packet buffer is allocated to a particular virtual channel of a plurality of virtual channels and the first packet is received on a first virtual channel” see e.g., column 3, lines 5-21 and column 7, lines 15-46. As to the limitation, “storing the first packet in a first packet buffer, the first packet buffer being dedicated to packets received over a first channel” also see e.g., column 3, lines 5-21 and column 7, lines 15-46. Examiner notes a reasonable but broad interpretation of “dedicated” in view of column 9, lines 20-26 of *Thorson*.

As to **claim 2**, see figures 5 and 6. It is important to note that examiner assumes a reasonable but broad interpretation of “posted request packet”. As such, a posted

commands virtual circuit may be the MAINTENANCE 60; C1 50,52,54,56; or NC1 58 virtual channels.

As to **claim 3**, see similar variation to claim 2.

As to **claim 4**, see e.g., column 7, lines 35-46.

As to **claim 5**, see e.g., column 3, lines 38-44.

As to **claim 6**, see similar variation to claim 1 and figure 6.

As to **claim 8**, see e.g., column 7, lines 17-35.

As to **claim 11**, see similar rejection to claim 1.

As to **claim 12**, see similar rejection to claim 2.

As to **claim 13**, see similar rejection to claim 3.

As to **claim 14**, see similar rejection to claim 4.

As to **claim 15**, see similar rejection to claim 5.

As to **claim 16**, see similar rejection to claim 6.

As to **claim 18**, see similar rejection to claim 8.

As to **claim 19**, see similar rejection to claim 8.

As to **claim 21**, see combined rejections of claims 1 and 2.

As to **claim 22**, see similar rejection to claim 4.

As to **claim 23**, see similar rejection to claim 1.

As to **claim 24**, see similar rejection to claim 3.

As to **claim 27**, see combined rejections of claims 1 and 2.

As to **claim 28**, see similar rejection to claim 4.

As to **claim 29**, see similar rejection to claim 1.

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As to **claim 30**, see e.g., column 7, lines 16-43.

As to **claim 31**, see similar rejection to claim 3.

3. **Claims 1-9, 11-16, 18-32** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,892,923 A to *Yasuda et al.* ("*Yasuda*").

As to **claim 1**, see embodiments one and two of *Yasuda*. In particular, note the virtual channel circuits accommodate different message types e.g., see column 3, line 59 – column 4, line 36). With respect to the limitation "receiving a first packet at a first node of the plurality of nodes, the first node comprising a plurality of packet buffers, wherein each packet buffer is allocated to a particular virtual channel of a plurality of virtual channels and the first packet is received on a first virtual channel" see e.g., column 7, line 65 – column 8, line 4 and column 19, lines 46-55. Please also note a slightly different interpretation of a dedicated channel.

As to **claim 2**, in reference to column 2, lines 48-55, see e.g., column 3, line 60 – column 4, line 6.

As to **claim 3**, see similar rejection for claim 2.

As to **claim 4**, see e.g., column 4, lines 55-67 and column 10, lines 30-42.

As to **claim 5**, see e.g., column 4, lines 1-7.

As to **claim 6**, see e.g., column 4, lines 17-36.

As to **claim 7**, see e.g., column 4, lines 1-7 also see figure 12.

As to **claim 8**, see e.g., column 4, lines 1-7. Also see e.g., column 9, lines 40-67.

As to **claim 9**, see e.g., column 4, lines 1-7.

As to **claim 11**, see similar rejection to claim 1.

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As to **claim 12**, see similar rejection to claim 2.

As to **claim 13**, see similar rejection to claim 3.

As to **claim 14**, see similar rejection to claim 4.

As to **claim 15**, see similar rejection to claim 5.

As to **claim 16**, see similar rejection to claim 6.

As to **claim 18**, see similar rejection to claim 8.

As to **claim 19**, see similar rejection to claim 8.

As to **claim 20**, see similar rejection to claim 9.

As to **claim 21**, see combined rejections of claims 1 and 2.

As to **claim 22**, see similar rejection to claim 4.

As to **claim 23**, see similar rejection to claim 1.

As to **claim 24**, see similar rejection to claim 3.

As to **claim 25**, see e.g., column 9, line 40 – column 10, line 6. See also column 19, lines 45-55.

As to **claim 26**, see similar rejection to claim 25.

As to **claim 27**, see combined rejections of claims 1 and 2.

As to **claim 28**, see similar rejection to claim 4.

As to **claim 29**, see similar rejection to claim 1.

As to **claim 30**, see e.g., column 9, line 40 – column 10, line 6. See also column 19, lines 45-55.

As to **claim 31**, see similar rejection to claim 3.

As to **claim 32**, see e.g., column 10, line 30-42.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,055,618 A to *Thorson* in view of “Distributed, Deadlock-Free Routing in Faulty, Pipelined, Direct Interconnect Networks” to *Gaughan et al.* (“*Gaughan*”).

In making a proper obviousness rejection under MPEP 706.02(j), the examiner will address the following four steps:

- a) *the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line numbers where appropriate;*
- b) *the difference of differences in the claim(s) over the applied cited references;*
- c) *the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter; and*
- d) *an explanation why one skilled in the art at the time of the invention was made would have been motivated to make the proposed modification.*

As such to **claim 7**, for step (a) *Thorson* discloses the limitations in the base claim. In particular, *Thorson* may teach control buffers as the response and request buffers shown in figures 5 and 6.

For step (b) *Thorson* is silent or deficient to the further limitation wherein the first plurality of packet buffers comprises command packet buffers and data buffers, wherein

the posted command packet buffer is one of the command packet buffers and wherein the data packet is stored in one of the data buffers.

Gaughan teaches the further recited limitation above at e.g., figure 3 at page 657.

For step (c), the proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Thorson* by clarify that data buffers are also used to store the data.

In order to establish a prima facie case of obviousness for step (d), three basic criteria must be met. The three criteria according to MPEP 706.02(j) are as follows:

First there must be some suggestion or modification, either in the reference(s) themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

As such, for step (d) examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the further limitation wherein the first plurality of packet buffers comprises command packet buffers and data buffers, wherein the posted command packet buffer is one of the command packet buffers and wherein the data packet is stored in one of the data buffers. In particular, the motivation for modifying the reference or to combine the reference teachings would be to store the data in separate data buffers such that control information is processed separately to increase performance. In particular, *Gaughan* cures the above-cited deficiency by providing a motivation found at e.g., figure 3 at page 657. Second, there would be a reasonable expectation of success since *Gaughan* also teaches a dedicated control

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channel see e.g., Section 3.2 at page 653. Thus the references either in singular or in combination teach the above claim limitation.

Allowable Subject Matter

6. **Claims 10 and 17** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (703) 305-4225. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DWF




CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Derrick W. Ferris
Examiner
Art Unit 2663

4/13/09